

Chapter 6: Wind Energy—Commercial and Community Wind

For additional charts and graphs related to wind energy, please refer to the *Kansas Energy Chart Book*, Chapter 6 (http://kec.kansas.gov/chart_book/).

GOAL: Develop 1,000 MW of wind-powered generation in Kansas by 2015.

Developing low-emission energy-generation technologies is an essential component of a comprehensive, long-range strategy to meet the state's future energy needs.

Topic/Issue Description

Kansas has abundant wind-energy resources. Along with North Dakota and Texas, Kansas is ranked as having the best potential nationwide for the development of wind-generated electricity.

Currently Kansas has 364 MW of installed wind capacity, and based solely on its wind resource, the State could generate much more wind-based electricity.¹ Many point to the vast development potential in the western part of the state; however, significant transmission upgrades and investment would be required to accommodate large-scale wind development in western Kansas.

In addition to being abundant and renewable, wind has the advantage of being clean—that is, wind-based electricity produces no emissions of regulated pollutants (such as SO₂, NO_x, or mercury) or currently unregulated carbon dioxide (CO₂).

In her January 21, 2005, letter to Kansas Corporation Commission Chair Brian Moline, Governor Kathleen Sebelius articulated her goal of developing the state's wind resource:

“As part of my goals to promote wind energy development in appropriate areas of the state, I believe it is appropriate to establish a vision for Kansas. I am challenging our electric industry to have 1,000 megawatts (MW) of renewable energy capacity installed in Kansas by 2015.”

Governor Sebelius asked the KCC to “look at the full range of benefits that renewable energy brings to Kansas and how those relate to additional investment that may be needed to meet the goal ... outlined for our electric industry.” In response to this request, KCC staff conducted an in-depth analysis of the benefits and costs of the Governor's “challenge.”

¹ A February 2002 Report of the U.S. PIRG Education Fund and State Public Interest Research Groups, *Generating Solutions: How States Are Putting Renewable Energy into Action* references Kansas in Appendix C as having 1,675,895 million kWh of wind potential.

The KCC benefit cost analysis shows that *additional* wind-generated electricity in Kansas is likely to be more expensive than electricity from the state's existing power plants, in spite of substantial federal and state incentives available for wind development (see list of existing policies below). Although the price of wind-generated electricity from the Gray County Wind Farm and Elk River Wind Farm was competitive for Aquila and Empire, utilities that relied more heavily on gas-fired generation, most utilities primarily rely on relatively inexpensive coal-fired and nuclear generation, and, thus, the cost of wind-generated electricity tends not to be competitive in most situations.²

However, the benefit cost analysis also shows that if the advantages the State derives from increasing its reliance on clean energy sources (e.g., reduction in health-related costs associated with airborne emissions) are factored into the equation, then wind is cost-effective in many instances.

It is important to note that the above advantages do not include the avoidance of carbon dioxide emissions, which are strongly correlated with global climate change. Although the U.S. currently has no policies or regulations to control carbon dioxide emissions, a recently released study compiled by Sir Nicholas Stern, former chief economist of the World Bank, suggests that the economic consequences of climate change could be devastating and calls for immediate government action, including a recommendation for 30% reduction of carbon emissions by 2020.³ In light of the expected federal regulation of carbon dioxide emissions, the economic advantages of wind would be expected to be even greater.

In summary, under current conditions, *additional* wind-generated electricity in Kansas generally will cost utilities, and thus ratepayers, more than electricity generated from existing power plants. Nonetheless, the advantages wind brings in terms of being a renewable and clean energy source, which can help reduce the state's reliance on fossil fuel resources, provide ample justification for a state policy to support additional wind development.

Existing Policies and Programs

1. The Federal Production Tax Credit (PTC) has been the most significant factor in U.S. wind energy development since its adoption in the Energy Policy Act of 1992. Originally set at a value of \$0.015/kWh, it automatically adjusts for inflation and now amounts to \$0.019/kWh. Typically extended for short

² Discussion of relative costs of is based on data from the Kansas Corporation Commission staff cost-benefit analysis made available to the KEC staff for assistance in developing this section.

³ More information about the *Stern Review on the Economics of Climate Change* is available at the BBC web site (<http://news.bbc.co.uk/2/hi/business/6098362.stm>).

intervals, it is currently set to expire at the end of 2008. Use of the tax credit requires significant eligible tax liability, tending to make wind attractive to (and to some extent restricting it to) large corporate developers.

2. Accelerated Cost Recovery, or depreciation, is available for most wind farm costs for federal tax purposes.
3. Kansas Property Tax Exemption is available for “all property actually and regularly used predominantly to produce and generate electricity utilizing renewable energy resources or technologies.”
4. Kansas Sales Tax Exemption [K.S.A. 79-3606(cc)] provides sales tax exemptions on certain sales of tangible personal property or services. An exemption certificate must be acquired from the state.
5. Kansas Job Creation Tax Credit [K.S.A. 79-32,160a] provides an income tax credits under specific circumstances for projects that create at least five new jobs.
6. Kansas Parallel Electric Generation Services Act [K.S.A. 66-1,184], which passed in 2001, requires an electric utility to pay no less than 150% of the utility’s monthly system average cost of energy per kWh to customers with excess energy to sell.
7. A group of Kansas laws were amended in 2003 to allow the formation of renewable energy co-ops consisting of five or more persons that produce at least 100 kW of energy (includes many but not all of the following: K.S.A. 17-4655 through 17-4681).
8. The Energy Policy Act (EPACT) of 2005 directs the federal government to increase its renewable energy use, to the extent economically feasible and technically practicable, to not less than 3% in FY07-09, 5% in FY10-12, 7.5% in FY13 and each fiscal year thereafter. Note: This will quickly make federal agencies large purchasers of renewable energy. Much of the demand will likely be met through Green Tags and Renewable Energy Certificates.
9. The U.S. Department of Agriculture provides competitive grants up to \$250,000 for energy efficiency improvements or \$500,000 for renewable energy systems (not to exceed 25% of the total project cost. Loan guarantees are also available to a maximum of \$10 million.

Policy and Program Recommendations Requiring Legislative Action

1. The Governor and the Legislature shall determine if and how State- and consumer-funded support should be structured to stimulate wind-energy development.

- a. **Description**

The Legislature is encouraged to investigate the need for additional incentives (e.g., State tax credits, KDFA financing) to stimulate the development of the State's wind energy resource, and, if deemed necessary, to approve such incentives.

- b. **Recommended Actions**

- i. **Responsible parties**

Governor, Legislature.

- ii. **Legislative action**

Enabling legislation may be necessary.

- iii. **Budget Requirements**

Some additional State funding may be necessary, depending on type of incentives enacted.

- iv. **Implementation Timeline**

Immediately following effective date of enabling legislation.

- c. **Implications of the proposal**

Pros

- i. Reduces emissions of regulated pollutants.
 - ii. Reduces emissions of carbon dioxide.
 - iii. Creates economic development opportunities in rural areas of the state where wind development occurs.

Cons

- i. Tax credits reduce State revenues and, thus, reduce funding for other items in the State general budget.
 - ii. May increase price of wind-generated electricity for ratepayers whose utility is awarded additional basis points. (Note: unlike

tax incentives or KDFA financing, granting an automatic higher rate of return on utility investment in wind projects would increase ratepayer bills.)

- iii. If market conditions change (e.g., the Federal government enacts CO₂ regulation), additional State subsidies may become excessive.
- iv. Uncertainty due to uncontrollable variables such as continuation of the federal production tax credit.

Policy and Program Recommendations Requiring Administrative Action

1. The Governor and the Legislature shall determine if and how State- and consumer-funded support should be structured to stimulate wind-energy development.

[See above discussion under Recommendations Requiring Legislative Action.]

Policy and Program Recommendations Requiring Action by the Kansas Corporation Commission

1. The Kansas Corporation Commission should consider the advantages associated with wind-generated electricity when evaluating applications or requests to approve decisions by jurisdictional utilities to invest in new generation or enter purchase power agreements for wind. As part of this broader consideration, the KCC will require utilities to demonstrate that competitive bids were solicited and the most responsible selection was made for the purchased power or investment.

a. Description

This recommendation encourages the KCC to consider the value of wind energy (in terms of its being a renewable and clean energy source) to Kansans in the Commission's formal evaluation of applications or requests to approve decisions by jurisdictional utilities to invest in new generation or enter purchase power agreements for wind-based electricity.

With this policy, the State recognizes the potential benefit to Kansans of reduced pollutants and greenhouse gas emissions attributable to wind development and declares that it is appropriate for the Kansas Corporation Commission to approve rates for electricity generated by clean and renewable sources, even if those rates are higher than what they would have been with full reliance on existing generation technologies.

b. Recommended Actions

i. Responsible parties

Utilities, KCC, wind-project developers.

ii. Legislative action

No enabling legislation is necessary.

iii. Budget Requirements

No state funds are required.

iv. Implementation Timeline

Effective January 2007, the KCC is encouraged to implement this broader consideration.

c. Implications of the proposal

Pros

- i. Reduces emissions of regulated pollutants.
- ii. Reduces emissions of carbon dioxide.
- iii. Creates economic development opportunities in rural areas of the state where wind development occurs.
- iv. Does not require additional state funding or result in additional loss of state tax revenues.

Cons

- i. Increases price of electricity to ratepayers whose utilities incorporate wind into their generation portfolios.
- ii. Uncertainty due to uncontrollable variables such as continuation of the federal production tax credit.

Policy and Program Recommendations for Ongoing Study

(None)